

Application No.: 10/606,964

Docket No.: 22040-00016-US1

**REMARKS**

Claims 5-14 are now pending in this application. Claims 5-7 and 11 are independent. Claims 5-10 have been amended, and claims 11-14 have been added by this amendment.

**Unpatentability Rejection over Franca-Neto**

Withdrawal of the rejection of claims 5, 6, 8, and 9 under 35 U.S.C. §103(a) as being unpatentable over Franca-Neto (US 6,509,799) is requested.

At the outset, Applicant notes that, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, *the prior art reference must teach or suggest all the claim limitations.*<sup>1</sup> Further, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.<sup>2</sup>

An essential evidentiary component of an obviousness rejection is a teaching or suggestion or motivation to combine or modify the prior art references.<sup>3</sup> Combining or modifying prior art references without evidence of a suggestion, teaching or motivation simply takes the inventors' disclosure as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight.<sup>4</sup>

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art."<sup>5</sup> Further with regard to the level of skill of practitioners in the art, there is

<sup>1</sup> See MPEP §2143.

<sup>2</sup> *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) and See MPEP §2143.

<sup>3</sup> *C.R. Bard, Inc. v. M3 Systems, Inc.*, 48 USPQ2d 1225 (Fed. Cir. 1998)

<sup>4</sup> *Interconnect Planning Corp. v. Feil*, 227 USPQ 543 (Fed. Cir. 1985)

<sup>5</sup> See MPEP §2143.01, citing *In re Rouffet*, 149 F.3d, 1350, 1357, 47 USPQ2d 1453, 1457-8 (Fed. Cir. 1998).

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nothing in the statutes or the case law which makes "that which is within the capabilities of one skilled in the art" synonymous with obviousness.<sup>6</sup> The level of skill in the art cannot be relied upon to provide the suggestion to combine references.<sup>7</sup>

#### *Deficiencies of Franca-Neto*

Franca-Neto is directed to an electrically tuned integrated amplifier for wireless communication which includes a resonant circuit with a voltage variable capacitance as one of its elements which is used to vary the center-frequency of the resonant circuit and the amplifier.

Applicants' disclosure relates to an amplifier circuit which reduces so-called "flicker noise" or "1/f noise" which poses particular problems at the frequencies associated with AM broadcasting, i.e., 530-1710 KHz or even lower frequencies such as 153-279 KHz. Such frequency ranges are adverse to use of CMOS circuitry, by the fact that NMOS devices used in CMOS configurations have undesirably high "1/f" noise characteristics.

In contrast, higher frequency applications at GHz or FM radio bands are typically not concerned with the effects of "1/f" flicker noise, since flicker noise is inversely proportional to the frequency of operation.

With respect to the claims and the specific deficiencies of Franco-Neto, the applied art, taken alone or in combination, does not teach or suggest an amplifier circuit suitable for amplifying an AM broadcast signal, which includes, among other features, "...first [and second] P-channel MOSFET[s]...[which] are cascode-coupled in a manner which ensures that a flicker noise level of the amplifier circuit is intermediate to respective flicker noise levels of a JFET-configured circuit and an N-MOS configured circuit", as recited in independent claim 5, as amended.

Further, the applied art, taken alone or in combination, does not teach or suggest an amplifier circuit suitable for amplifying an AM broadcast signal, which includes, among other

<sup>6</sup> *Ex parte Gerlach and Woerner*, 212 USPQ 471 (PTO Bd. App. 1980).

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features, "...a first P-channel MOSFET...[and] a second P-channel MOSFET...wherein said first P-channel MOSFET and said second P-channel MOSFET are configured in a cascode-coupled arrangement which reduces a flicker noise of the amplifier circuit below a flicker noise level of an equivalent N-MOS configured circuit", as recited in independent claim 6, as amended.

***Prima Facie Case has not Been Established due to Improper Motivation***

The Examiner admits that Franca-Neto is deficient with respect to providing a teaching or suggestion of replacing the disclosed N-type transistors of Franca-Neto with Applicants' claimed P-channel MOSFETs.

The Examiner states that the motivational basis for modifying Franca-Neto is that replacing an n-channel MOSFET with a p-channel MOSFET would be obvious to a person having skill in the art as a "reversal of parts" involving only routine skill, with specific reference to MPEP §2144.04 VI A. Applicants respectfully traverse this erroneous application of the rationale of "reversal of parts" to support a finding of obviousness, as discussed below.

Reversal of parts draws the wrong analogy to the situation in the instant application and pending claims. In particular, MPEP 2144.04 VI A cites *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955). In *Gazda*, the prior art disclosed a clock fixed to the stationary steering wheel column of an automobile, where the gear for winding the clock moved with steering wheel. Mere reversal of such movement, so that the clock moves with the wheel, was held to be an obvious expedient, or a mere "reversal of parts".

Applicants submit that "reversal of parts" is not an appropriate basis for establishing the motivation to modify the primary reference in this technology area in the manner suggested by the Examiner.

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<sup>7</sup> See MPEP §2143.01, citing *AI-Site Corp. v. VSI Int'l Inc.*, 50 USPQ2d 1161 (Fed. Cir. 1999).

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In the instant application, and in RF amplifier arts in particular, and in solid state circuit design arts in general, n-channel MOSFETS and p-channel MOSFETS are recognized as possessing different operating characteristics, which can be particularly noteworthy and important as a function of operating frequency.

For example, Applicants' FIG. 3 illustrates one frequency-dependent difference between NMOS, PMOS, and JFET devices, in terms of noise level as a function of frequency. Applicants respectfully suggest that a person having skill in the art would not be motivated to look to Franca-Neto to solve the flicker noise problems at AM broadcast frequencies addressed by Applicants' claimed invention. In fact, Franca-Neto is silent on solving flicker noise problems, as this reference appears to be primarily directed to higher frequency applications, e.g., wireless communication applications.

As the Federal Circuit has noted, "[a] reference is not available under 35 USC §103 if it is not within the field of the inventor's endeavor and was not directly pertinent to the particular problem with which the inventor was involved."<sup>8</sup>

Further, as discussed in MPEP §2144, if the facts in a prior legal decision are sufficiently similar to those in an application under examination, the examiner may use the rationale used by the court. The examples found in the MPEP which are directed to various common practices which the court has held normally require only ordinary skill in the art and hence are considered routine expedients are discussed in MPEP §2144.01, a section of which was cited by the Examiner.

However, the MPEP also indicates that if the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law in §2144.01 as the rationale to support an obviousness rejection.

Applicants submit that "reversal of parts" is more appropriately related to physically switching or rearranging the location of parts in an assembly or circuit, and is generally not a

<sup>8</sup> *King Instrument Corp. v. Otari Corp.*, 226 USPQ 402 (Fed. Cir. 1985).

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correct interpretation if the *function* performed by the elements in the reference and the claim limitation are different. For example, given the critical differences in NMOS and PMOS devices in achieving Applicants' stated objectives of reducing flicker noise, as discussed in the instant Specification, Applicants submit that assertion of reversal of parts is improper in connection with the claimed invention.

Since the applied art does not teach or suggest all the claimed limitations, and since proper motivation to modify Franca-Neto has not been established, withdrawal of the rejection and allowance of independent claims 5 and 6 are requested.

Further, as dependent claims 8 and 9 depend, respectively, from allowable claims 5 and 6, these claims are submitted as being allowable at least on that basis, without recourse to the further patentable limitations contained therein.

However, Applicants point out that features of dependent claims 8 and 9 are not taught or suggested by the applied art. In particular, Franca-Neto does not teach or suggest that a channel area of the P-channel MOSFET is selected to reduce a flicker noise of the amplifier circuit, as recited in dependent claims 8 and 9. Franca-Neto is silent on the subject of "1/f" flicker noise.

Allowance of these claims are requested.

**Unpatentability Rejection over Franca-Neto and Luo et al.**

Withdrawal of the rejection of claims 7 and 10 under 35 U.S.C. §103(a) as being unpatentable over Franca-Neto in view of Luo et al. (US 6,417,734) is requested.

The legal criteria for a *prima facie* case of unpatentability has been set forth above.

In the interests of brevity, Applicants point out that the arguments against the unpatentability rejection of independent claim 7 are similar to those invoked above with respect to the rejections of independent claims 5 and 6. The secondary reference to Luo et al. has been applied to provide a teaching of a DC blocking capacitor in the input.

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Whether or not Luo et al. teaches that for which it is offered by the Examiner, Luo et al. is submitted as not making up for the deficiencies of Franca-Neto, as discussed above with respect to independent claims 5 and 6.

In particular, the applied art, taken alone or in combination, does not teach or suggest an amplifier circuit suitable for amplifying an AM broadcast signal which includes, among other features, "...a first P-channel MOSFET...a second P-channel MOSFET...wherein said first P-channel MOSFET and said second P-channel MOSFET are configured in a cascode-coupled arrangement which reduces a flicker noise of the amplifier circuit below a flicker noise level of an equivalent N-MOS configured circuit", as recited in independent claim 71, as amended.

Any "reversal of parts" argument that might be invoked in the rejection of claims 7 and 10 has been traversed above in the discussion of the rejection of claims 5 and 6.

Since the applied art does not teach or suggest all the claimed limitations, and since proper motivation to modify Franca-Neto has not been established, withdrawal of the rejection and allowance of independent claim 7 are requested. Further, since dependent claim 10 depends from allowable claim 7, reconsideration and allowance of claim 10 are also requested.

#### New Claims 11-14

Newly-presented claims 11-14 have been drafted to avoid the applied art and to further claim applicants' invention using alternative claim language. Consideration and allowance of claims 11-14 are requested.

#### Conclusion

In view of the above, each of the presently pending claims 5-14 in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

If the Examiner believes that an interview would serve to resolve any remaining issues in this application, the undersigned attorney is available at the telephone number indicated below.

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For any fee that may be due with this response, please charge CBLH Deposit Account No. 22-0185, under Order No. 22040-00016-US1 from which the undersigned is authorized to draw.

Respectfully submitted,

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